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10/619,122	07/14/2003	Herman Lee	112056-0085	6869

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EXAMINER	
JEAN GILLES, JUDE	
ART UNIT	PAPER NUMBER
2143	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/619,122	LEE ET AL.	
	Examiner	Art Unit	
	JUDE J. JEAN GILLES	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-62* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is in Reply to communication filed on 03/20/2008.

Response to Arguments

1. Applicant's arguments filed 03/20/2008 have been fully considered but they are not persuasive. Claims 29-62 are in the case. Claims 52-62 have been added. Claims 29, 31, 34, 40, 42, and 51 have been amended. Because it is likely that the same arguments presented in their reply will resubmitted in future correspondence, in order to expedite prosecution, The Examiner thinks it is prudent to address the main points of contention:

Point A) Applicants contend that Kumar teaches a mapping function by maintaining a lun map at a central location. The lun map is created before receiving a data access request. Also, the lun map is periodically distributed to the appropriate network devices (e.g., virtualization ports) (Kumar; [0098]). Further, Kumar's lun map contains lun numbers for a plurality of clients (Fig. 12, [94-97]). Applicant generates a client specific lun map in response to the client log in request. By comparison, Kumar has already created a lun map which is stored at a central location such as the virtual enclosure server. Moreover, Applicant exports the lun numbers to a specific client, whereas Kumar periodically distributes it to the appropriate network devices (e.g., virtualization ports). Applicants argue that Additionally, Applicant's claimed lun map is client specific. This is distinct from Kumar which has a lun mapping table used to identify each initiator (e.g.,

host, client etc.) ([Kumar; [0096]). As such, Kumar must search all clients for each data request to identify which enclosure ports are available to each client (Kumar; [0096]).

The Examiner disagrees with Applicants' interpretation of the Kumar. Exporting the lun numbers to one client cannot possibly be novel in the art as compared to executing the same process, namely "exporting the lun mumbers" to a plurality of clients. (see oar. 0054 and 0096). The teaching here is that not only Kumar is capable of exporting the lun number to one or more initiator/client contrary to the assertion of Applicants.

In response to Applicant's arguments, 37 CFR § 1.111(c) requires applicant to "clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must show the amendments avoid such references or objections."

Examiner notes that no new matter has been added and that the new claims are supported by the application as filed. However, applicant has failed in presenting claims and drawings that delineate the contours of this invention as compared to the cited prior art. Applicant has failed to clearly point out patentable novelty in view of the state of the art disclosed by the references cited that would overcome the 102(e) anticipation and the 103(a) rejections applied against the claims, the rejection is therefore sustained.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 29-51** are rejected under 35 U.S.C. 102(e) as being anticipated by Kumar et al (Kumar), U.S. Pub. No. 2003/0131182 A1.

Regarding **claim 29-51**, Kumar discloses:

29. (New) A method for accessing a data storage system (*fig. 2*), comprising:

maintaining a virtual logical unit assigned to a specific clients (last 3 lines of par. 0048; par. 0052, and 0079; *note that the hosts or clients are specific are defined as initiators of the network and that a host initiator is assigned to one or more virtual LUNs*);

receiving a log in request from a first specific client , the log in request directed to the virtual logical unit (*par. 0098; see that the virtual enclosure represents the virtual LUN*);

generating, in response to the log in request, a logical unit number map (lun map) from the virtual logical unit to one or more physical logical units (*par. 0098*), the specific client having permission to access the physical logical units mapped by the lun

map, the map presenting one or more client specific lun numbers accessible solely by the first specific client, mapped to one or more physical lun numbers utilized by the storage operating system (*par. 0054, and par. 0057-0058*);

exporting the client specific lun numbers to the specific client (*see fig. 12; par. 0096; in par. 0048 note that in the SCSI standard, LUN refers to a logical unit number and that the SCSI based terminology is used in this invention*); and

receiving a data access request from the first specific client, the request directed to a selected client specific lun, and translating the client specific lun into a selected physical lun number, the physical lun number accessing the physical logical unit supporting the client specific lun (*par. 0096-0097*).

30. (New) The method of claim 29, further comprising:

generating the lun map to have a set of ordered pairs mapping one or more virtual luns to one or more physical luns (*see LUN map of fig. 12; par. 0096; note the pair LUN# and VLUN whereas, LUN# is the physical LUN and that the virtual LUN is the VLUN i.e. (1208, 1204)*).

31. (New) The method of claim 29, further comprising:

exporting a virtual lun number to the client; and

associating a physical lun number with the storage system (*see fig. 12, and 13; par. 0096-0097; note the provision of additional level of storage virtualization at the end of par. 0097).*

32. (New) The method of claim 29, further comprising:

identifying a set of luns that the client may access in response to the client logging in by,

(a) selecting a lun data structure (*par. 0098; a map table is a type of data structure*);

(b) searching through a list of client identifiers in the lun data structure to identify whether the client may access the selected lun (*par. 0096*);
repeating steps (a) and (b) for each lun data object associated with a given storage system (*par. 0096, and 0098*); and

accessing, in response to a client data access request, a lun data object by use of the lun map and without searching the lun data structure (*par. 0097; see also fig. 13*).

33. (New) The method of claim 29, further comprising:

accessing a set of lun data structures associated with the storage system in identifying the one or more physical logical units which the client has permission to access (*see fig. 12, and 13; par. 0096-0097*).

34. (New) The method of claim 29, further comprising:

using as a world wide name as a client identifier (*par. 0067*).

35. (New) The method of claim 29, further comprising:

using a Fibre Channel switching network for the client to access the data storage system (*par. 0067-0068*).

36. (New) The method of claim 29, further comprising:

using an Ethernet switching network for the client to access the data storage system (*par. 0036 and 0055*).

37. (New) The method of claim 29, further comprising:

using a multi-protocol storage appliance as the data storage system (*par. 0055*).

38. (New) The method of claim 29, further comprising:

exporting a set of virtual luns to the client as a set of accessible luns client (*see fig. 12; par. 0096)*.

39. (New) The method of claim 29, further comprising:

containing the lun map within an initiator data structure accessible to the virtual logical unit (*par. 0098)*.

40. (New) A data storage system, comprising:

a virtual logical unit assigned to a specific client (last 3 lines of par. 0048; par. 0052, and 0079; *note that the hosts or clients are specific are defined as initiators of the network and that a host initiator is assigned to one or more virtual LUNs*);

a log in request received from the specific client, the log in request directed to the virtual logical unit (*par. 0098; see that the virtual enclosure represents the virtual LUN;* 0067, 0069, 0092-0093);

a logical unit number map (lun map) initiated, in response to the log in request, the map mapping from the virtual logical unit to one or more physical logical units (*par. 0098*), the specific client having permission to access the physical logical units indicated by the lun map, the map presenting one or more client specific lun numbers mapped to

one or more physical lun numbers utilized by the storage operating system (par. 0054, and par. 0057-0058);

the client specific lun numbers exported to the client (*see fig. 12; par. 0096; in par. 0048 note that in the SCSI standard, LUN refers to a logical unit number and that the SCSI based terminology is used in this invention*); and

a data access request received from the client, the request directed to a selected client specific lun, and translating the client specific lun by the map into a selected physical lun number, the physical lun number accessing a physical logical unit supporting the client specific lun (*par. 0096-0097*).

41. (New) The data storage system of claim 40, further comprising:

the lun map having a set of ordered pairs mapping one or more virtual luns to one or more physical luns (*see LUN map of fig. 12; par. 0096; note the pair LUN# and VLUN whereas, LUN# is the physical LUN and that the virtual LUN is the VLUN i.e. (1208, 1204)*).

42. (New) The data storage system of claim 40, further comprising:

exported a virtual lun number to the client; and

a physical lun number associated with the storage system (*see fig. 12, and 13; par.*

0096-0097; note the provision of additional level of storage virtualization at the end of par. 0097).

43. (New) The data storage system of claim 40, further comprising:

a set of luns that the client may access identified in response to the client logging in by,

(a) selecting a lun data structure (*par. 0098; a map table is a type of data structure*);

(b) searching through a list of client identifiers in the lun data structure to identify whether the client may access the selected lun (*par. 0096*);
repeating steps (a) and (b) for each lun data object associated with a given storage system (*par. 0096, and 0098*); and

a client data access request to access a lun data object by use of the lun map and without searching the lun data structure (*par. 0097; see also fig. 13*).

44. (New) The data storage system of claim 40, further comprising:

a set of lun data structures associated with the storage system accessed in identifying the one or more physical logical units which the client has permission to access (*see fig. 12, and 13; par. 0096-0097*).

45. (New) The data storage system of claim 40, further comprising:

a world wide name used as a client identifier (*par. 0067*).

46. (New) The data storage system of claim 40, further comprising:

a Fibre Channel switching network used for the client to access the data storage system (*par. 0067-0068*).

47. (New) The data storage system of claim 40, further comprising:

an Ethernet switching network used for the client to access the data storage system (*par. 0036 and 0055*).

48. (New) The data storage system of claim 40, further comprising:

a multi-protocol storage appliance used as the data storage system (*par. 0055*).

49. (New) The data storage system of claim 40, further comprising:

a set of virtual luns exported to the client as a set of accessible luns (*see fig. 12; par. 0096).*

50. (New) The data storage system of claim 40, further comprising:

the lun map contained within an initiator data structure accessible to the virtual logical unit (*par. 0098).*

51. (New) A computer readable media, comprising:

said computer readable media containing instructions for execution on a processor for accessing a data storage system, the data storage system having the steps of, maintaining a virtual logical unit assigned to a specific client (fig. last 3 lines of par. 0048; par. 0052, and 0079; *note that the hosts or clients are specific are defined as initiators of the network and that a host initiator is assigned to one or more virtual LUNs*);

receiving a log in request from the specific client, the log in request directed to the virtual logical unit (*par. 0098; see that the virtual enclosure represents the virtual LUN;* 0067, 0069, 0092-0093);

initiating, in response to the log in request, a logical unit number map (lun map) from the virtual logical unit to one or more physical logical units (*par. 0098*), the specific

client having permission to access the physical logical units indicated by the lun map, the map presenting one or more client specific lun numbers mapped to one or more physical lun numbers utilized by the storage operating system (*par. 0054, and par. 0057-0058*);

exporting the client specific lun numbers to the client (*see fig. 12; par. 0096; in par. 0048 note that in the SCSI standard, LUN refers to a logical unit number and that the SCSI based terminology is used in this invention*); and

receiving a data access request from the client, the request directed to a selected client specific lun, and translating the client specific lun by the map into a selected physical lun number, the physical lun number accessing a physical logical unit supporting the client specific lun (*par. 0096-0097*).

52. (New) A method for accessing a data storage system, comprising:
logging into the data storage system by a client (0067, 0069, 0092-0093);
generating a logical unit number map (lun map) for one or more physical logical units the client is permitted to access, the lun map excluding mapping of physical logical units the client is not permitted to access (*par. 0054, and par. 0057-005; 00988*);

exporting the lun map to the client (*see fig. 12; par. 0096; in par. 0048 note that in the SCSI standard, LUN refers to a logical unit number and that the SCSI based terminology is used in this invention*); and

receiving a data access request from the client for data on a lun mapped by the lun

map (*par. 0096-0097*).

53. (New) The method of claim 52, further comprising:

accessing the physical logical unit supporting the client specific lun (0054).

54. (New) The method of claim 52, further comprising:

identifying a set of luns that the client may access in response to the client logging in by,

(a) selecting a lun data structure (*par. 0098; a map table is a type of data structure*);

(b) searching through a list of client identifiers in the lun data structure to identify whether the client may access the selected lun (*par. 0096- 0098*);

repeating steps (a) and (b) for each lun data object associated with a given storage system (*par. 0096- 0098*); and

accessing, in response to a client data access request, a lun data object by use of the lun map and without searching the lun data structure (*par. 0096- 0098*).

55. (New) The method of claim 53, further comprising:

accessing a set of lun data structures associated with the storage system in identifying the one or more physical logical units which the client has permission to access (*see fig. 12, and 13; par. 0096-0097*).

56. (New) The method of claim 53, further comprising:

containing the lun map within an initiator data structure accessible to the virtual logical unit (0054; disclosure of claim 19).

57. (New) A system for accessing a data storage system, comprising:

a client configured to log into the data storage system (0067, 0069, 0092-0093);

a client specific logical unit number map (lun map) configured to be generated for one or more physical logical units the client is permitted to access, the lun map further configured to exclude mapping of physical logical units the client is not permitted to access (*par. 0054, and par. 0057-005; 00988*);

the lun map further configured to be exported to the client (*see fig. 12; par. 0096; in par. 0048 note that in the SCSI standard, LUN refers to a logical unit number and that the SCSI based terminology is used in this invention*); and

the client further configured to send a data access request for data on a lun mapped by the lun map (*par. 0096-0097*).

58. (New) The system of claim 57, further comprising:

the physical lun number configured to access the physical logical unit (see disclosure of claims 19 and 20).

59. (New) The system of claim 57, further comprising:

(a) a lun data structure selected in response to the log in by the client (0067, 0069, 0092-0093);

(b) a storage system to search through a list of client identifiers in the lun data structure to identify whether the client may access the selected lun, the storage system to repeat steps (a) and (b) for each lun data object associated with a given storage system; and a lun data object accessed by use of the lun map and without a search of the lun data structure (*par. 0054, and par. 0057-005; 00988*).

60. (New) The system of claim 57, further configured to access a set of lun data structures associated with the storage system to identify the one or more physical logical units which the client has permission to access (see disclosure of claims 19 and 20).

61. (New) The system of claim 57, further comprising:

an initiator data structure configured to access the virtual logical unit contained in the lun map (0054).

62. (New) A computer readable media, comprising:

said computer readable media containing instructions for execution on a processor for the practice of a method of accessing a data storage system, the method having the steps of,

logging into the data storage system by a client (0067, 0069, 0092-0093);

generating a client specific logical unit number map (lun map) for one or more physical logical units the client is permitted to access, the lun map excluding mapping of

physical logical units the client is not permitted to access (*par. 0054, and par. 0057-005; 00988*);

exporting the lun map to the client (*see fig. 12; par. 0096; in par. 0048 note that in the SCSI standard, LUN refers to a logical unit number and that the SCSI based terminology is used in this invention*); and

receiving a data access request from the client for data on a lun mapped by the lun map (0096-0098).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (571) 272-3914. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3301.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-0800.

/Jude J Jean-Gilles/

Primary Examiner, Art Unit 2143

JJG

June 22, 2008

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2154